



# EV12-33H(12V33Ah)



## Specification

Cells Per Unit	6
Voltage Per Unit	12V
Capacity	33Ah@20hour-rate to 1.75V per cell @25°C
Weight	Approx. 10.0 Kg (Tolerance ±5%)
Internal Resistance	≤10.0 mΩ (Full Charge Condition @25°C)
Terminal	Default F11(M6), F7(M8) Optional
Max. Discharge Current	330A (5 sec)
Cold Cranking Ampere(CCA)	230A
Maxi. Charging Current	9.9A
Reference Capacity	C <sub>3</sub> 24.8Ah
	C <sub>5</sub> 28.1Ah
	C <sub>10</sub> 31.4Ah
	C <sub>20</sub> 33.0Ah
Float Charging Voltage	13.6 V~13.8 V @ 25°C Temperature Compensation: -3mV/°C/Cell
Cycle Use Voltage	14.6 V~14.8 V @ 25°C Temperature Compensation: -4mV/°C/Cell
Operating Temperature Range	Discharge: -20°C~60°C Charge: 0°C~50°C Storage: -20°C~60°C
Normal Operating Temperature Range	25°C ±5°C
Self Discharge	RITAR Valve Regulated Lead Acid (VRLA) batteries can be stored for up to 6 months at 25°C and then recharging is recommended. Monthly Self-discharge ratio is less than 3% at 25°C. Please charged batteries before using.
Container Material	A.B.S. UL94-HB, UL94-V0 Optional.



EV ( Electric Vehicle ) series is specially designed for frequent discharge deep cycle application. By using the specially designed active material, strong grids and thick plate construction, the EV series battery offers reliable performance in high load situations and could provide competitive cycle performance. It is suitable for Electric Vehicle and Golf cart, Floor Machines, Forklifts, Aerial lifts, Robotics, Marine, RV, Mobility and Medical Equipment, and most outdoor application.



## Dimensions

Length	195±2mm (7.68 inches)
Width	130±2mm (5.12 inches)
Height	155±2mm (6.10 inches)
Total Height	168±2mm (6.61 inches)
Terminal	Value
M5	6~7 N*m
M6	8~10 N*m
M8	10~12 N*m

Unit: mm

### Constant Current Discharge Characteristics : A(25°C)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	113.8	85.4	63.6	37.0	20.2	12.0	9.31	7.31	6.22	4.09	3.31	1.72
1.65V	109.7	80.7	60.9	35.6	19.5	11.6	9.02	7.12	6.06	4.05	3.27	1.69
1.70V	104.3	74.3	57.0	34.0	18.8	11.2	8.77	6.92	5.91	3.98	3.22	1.67
1.75V	97.5	68.0	53.0	32.5	18.1	10.8	8.51	6.75	5.76	3.93	3.18	1.65
1.80V	88.8	61.6	49.0	31.1	17.5	10.4	8.25	6.55	5.61	3.86	3.14	1.63
1.85V	78.1	50.3	40.6	26.7	15.7	9.54	7.63	6.09	5.23	3.62	2.95	1.55

### Constant Power Discharge Characteristics : W/Cell(25°C)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	195.8	145.2	111.3	67.3	37.9	22.7	17.8	14.0	12.0	7.99	6.50	3.38
1.65V	193.8	139.9	108.0	65.3	36.8	22.0	17.3	13.7	11.7	7.92	6.43	3.33
1.70V	186.4	131.1	102.6	63.0	35.8	21.4	16.9	13.4	11.5	7.81	6.34	3.30
1.75V	177.2	122.2	96.9	60.9	34.7	20.8	16.5	13.1	11.2	7.72	6.27	3.26
1.80V	164.3	112.6	90.7	58.7	33.6	20.1	16.0	12.8	11.0	7.61	6.19	3.23
1.85V	147.2	93.6	76.4	51.1	30.3	18.6	14.9	11.9	10.3	7.16	5.84	3.07

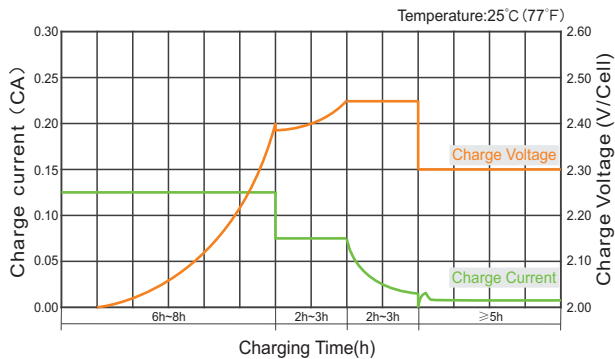
(Note) The above characteristics data are average values obtained within three charge/discharge cycle not the minimum values. The battery must be fully charged before the capacity test. The C<sub>20</sub> should reach 95% after the first cycle and 100% after the third cycle.



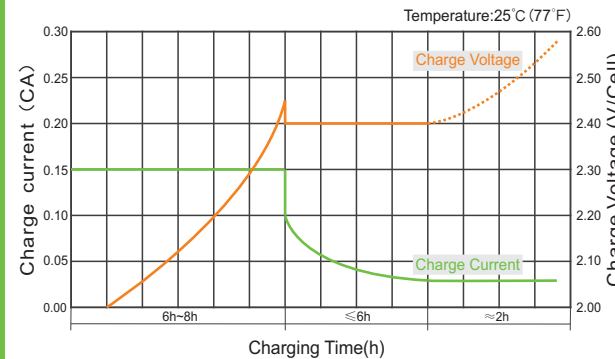
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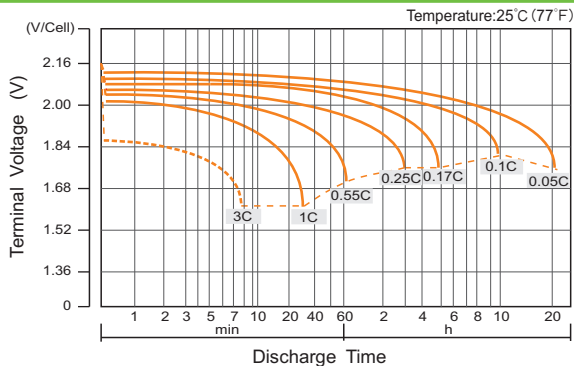
## Charge Characteristic Curve for Cycle Use(IUUU)



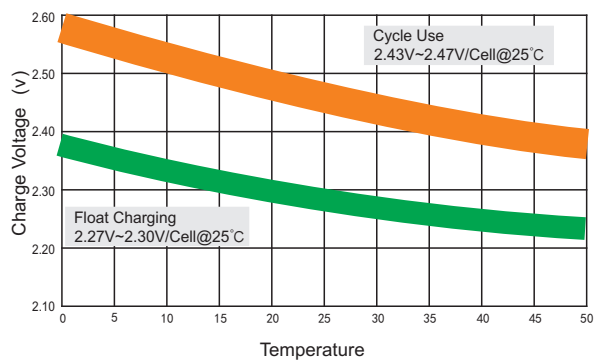
## Charge Characteristic Curve For Cycle Use(III)



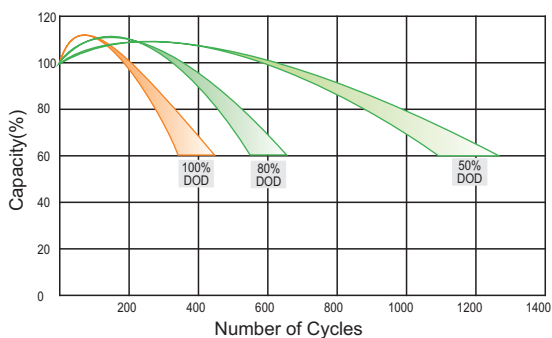
## Discharge Characteristics Curve



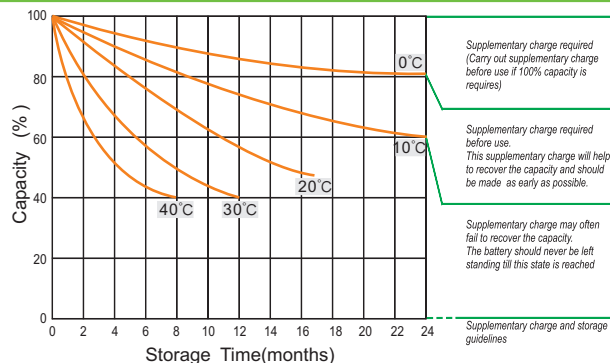
## Relationship Between Charging Voltage and Temperature



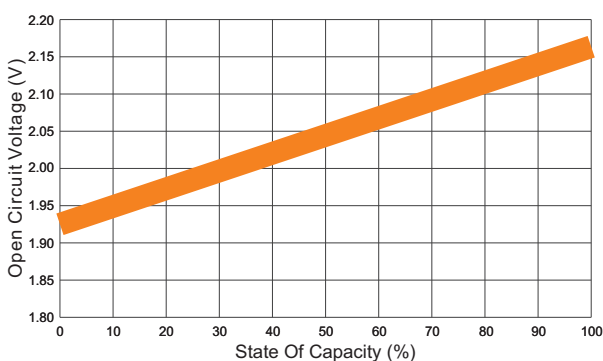
## Cycle Life in Relation to Depth of Discharge



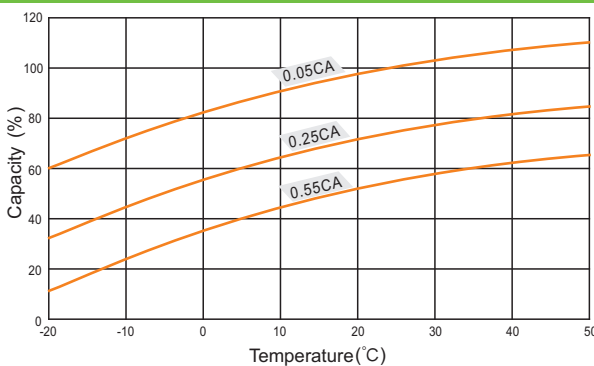
## Storage Characteristics



## Relationship of OCV And State of Charge(20°C)



## Temperature Effects on Capacity



(Note) All above information shall be changed without prior notice, RITAR reserves the right to explain and update the latest information.